



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/620,047	07/14/2003	Meng Yao	D/A2584Q	7659
25453	7590	09/10/2007	EXAMINER	
PATENT DOCUMENTATION CENTER			WORKU, NEGUSIE	
XEROX CORPORATION			ART UNIT	PAPER NUMBER
100 CLINTON AVE., SOUTH, XEROX SQUARE, 20TH FLOOR			2625	
ROCHESTER, NY 14644				
MAIL DATE		DELIVERY MODE		
09/10/2007		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/620,047	YAO, MENG	
	<b>Examiner</b>	<b>Art Unit</b>	
	Negussie Worku	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 14 July 2003.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-13 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 07/14/08 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date see Attachment.
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_\_.

## DETAILED ACTION

1. This Office action is in reply to application filed on 07/14/03, claims 1-13 are pending in the application, of which claims 1, 5, 8 and 12 are dependent.

### ***Information Disclosure Statement***

2. The information disclosure statement (IDS) submitted on 01/17/06 and 07/14/03, have been reviewed. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the examiner is considering the information disclosure statement.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mongeon (USP 5710824) in view of Magee (USP 5,231, 504).

Art Unit: 2625

With respect to claim 1, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2) comprising: determining a relative amount of gray in initial CMY data values (determining a maximum and minimum values of colorant signal, col4., lines 35-45);

Determining a relative amount of chroma in the initial CMY data values (CMY colorant signal determined through interpolation, col.5, lines 36-40); and for each of the initial CMY data values, (colorant signal CMY, as shown in fig 2), adding a portion of a corresponding maximum gray balance adjusted value (determining maximum and minimum value, col.6, lines 53-57) and a portion of a corresponding maximum color saturation adjusted value to produce respective gray balance adjusted and color saturation adjusted CMY data values (col.5, lines18-21).

Although Mongeon teaches determining a maximum/minimum CMY value in a color correction circuit 20 as shown in fig 2), Mongeon fails expressly to teach wherein the portion of a corresponding maximum gray balance adjusted value is a function of the relative amount of gray and the portion of the maximum saturation adjusted value is a function of the relative amount of chroma.

Magee in the same area of method for improving color reproduction using linear mixing calculation based on positional relation ships as shown in fig 1-4), teaches wherein the portion of a corresponding maximum gray balance adjusted value is a function of the relative amount of gray and the portion of the maximum saturation adjusted value is a function of the relative amount of chrome, (step for adjusting saturation in box 110 of fig 1, recognize that the ratio of the original hue to the pure hue

Art Unit: 2625

calculating for adjusting saturation should not include the portion of the distance, col.18, lines 37-50).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the imaging apparatus of Mongeon (824) to include: teaches wherein the portion of a corresponding maximum gray balance adjusted value is a function of the relative amount of gray and the portion of the maximum saturation adjusted value is a function of the relative amount of chrome.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified imaging device of Mongeon by the teaching of Magee (824) the purpose and the motivation doing that is, it would have provide to a user a saturation ratio accelerator factor for tailoring an original highly saturated or lightly saturated image to a gamate of the subtractive reproduction device in order to preserve the high or low saturation characteristics of original image, as discussed by Magee (504), in col.9, lines 35-40.

With respect to claim 2, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2), wherein determining a relative amount of gray comprises calculating a ratio between a minimum of the initial CMY data values and a maximum of the initial CMY data values, (the amount of gray calculated as illustrated in fig 3, the color values are linear zed, so that linearly increasing value of colorants produce a linearly increasing colorimetric response being calculated, col.5, lines 62-68).

Art Unit: 2625

With respect to claim 3, Mongeon teaches a method (scanning and printing system as shown in fig 2), wherein determining a relative amount of chroma comprises calculating (1-RATIO) wherein RATIO is a ratio between a minimum of the initial CMY data values and a maximum of the initial CMY data values (the amount of gray calculated as illustrated in fig 3, the color values are linear zed, so that linearly increasing value of colorants, col.5, lines 62-68).

With respect to claim 4, Mongeon teaches a method (scanning and printing system as shown in fig 2), wherein determining a relative amount of gray comprises determining a relative amount of gray using (maximum and minimum values of CMY is being determined, col.6, lines 54-60),  $RATIO=MIN(C, M, Y)/MAX(C, M, Y)$  wherein  $MIN(C, M, Y)$  is a minimum of the initial CMY data values and  $MAX(C, M, Y)$  is a maximum of the initial CMY data values (col.6, lines 1-10); determining a relative amount of chroma comprises calculating (1-RATIO), (col.6, lines 54-60), and adding a portion of a corresponding maximum gray balance adjusted value and a portion of a corresponding maximum color saturation adjusted value to produce respective gray balance adjusted and color saturation adjusted CMY data values (col.5, lines 45-50) comprises:  $C=GRAYBAL\_C(C)*RATIO+SAT\_C(C)*(1-RATIO)$   
 $M=GRAYBAL\_M(M)*RATIO+SAT\_M(M)*(1-RATIO)$   
 $Y=GRAYBAL\_Y(Y)*RATIO+SAT\_Y(Y)*(-1-RATIO)$  wherein  $GRAYBAL\_C(C)$ ,

Art Unit: 2625

GRAYBAL\_M(M) and GRAYBAL\_Y(Y) are maximum gray balance adjusted values, and SAT\_C(C), SAT\_M(M) and SAT\_Y(Y) are maximum color saturation adjusted values.

With respect to claim 5, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2) comprising: determining a relative amount of gray in initial CMY data values (determining a maximum and minimum values of colorant signal, col4, lines 35-45);

determining a relative amount of chroma in the initial CMY data values (CMY colorant signal determined through interpolation, col.5, lines 36-40); and for each of the initial CMY data values, (colorant signal CMY, as shown in fig 2), adding a portion of a corresponding maximum gray balance adjusted value (determining maximum and minimum value, (col.6, lines53-57) and a portion of a corresponding maximum color saturation adjusted value to produce respective gray balance adjusted and color saturation adjusted CMY data values (col.5, lines18-21).

Although Mongeon teaches determining a maximum/minimum CMY value in a color correction circuit 20 as shown in fig 2), Mongeon fails expressly to teach wherein the portion of a corresponding maximum gray balance adjusted value is a function of the relative amount of gray and the portion of the maximum saturation adjusted value is a function of the relative amount of chroma.

Magee in the same area of method for improving color reproduction using linear mixing calculation based on positional relationships as shown in fig 1-4), teaches wherein the portion of a corresponding maximum gray balance adjusted value is a

Art Unit: 2625

function of the relative amount of gray and the portion of the maximum saturation adjusted value is a function of the relative amount of chrome, (step for adjusting saturation in box 110 of fig 1, recognize that the ratio of the original hue to the pure hue calculating for adjusting saturation should not include the portion of the distance, col.18, lines 37-50).

Therefore, it would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified the imaging apparatus of Mongeon (824) to include: teaches wherein the portion of a corresponding maximum gray balance adjusted value is a function of the relative amount of gray and the portion of the maximum saturation adjusted value is a function of the relative amount of chrome.

It would have been obvious to a person with ordinary skill in the art at the time the invention was made to have modified imaging device of Mongeon by the teaching of Magee (824) the purpose and the motivation doing that is, it would have provide to a user a saturation ratio accelerator factor for tailoring an original highly saturated or lightly saturated image to a gamate of the subtractive reproduction device in order to preserve the high or low saturation characteristics of original image, as discussed by Magee (504), in col.9, lines 35-40.

With respect to claim 6, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2), wherein determining a relative amount of gray comprises calculating a ratio between a minimum of the initial primary color data values and a maximum of the initial primary color data

values, (the amount of gray calculated as illustrated in fig 3, the color values are linear zed, so that linearly increasing value of colorants produce a linearly increasing colorimetric response being calculated, col.5, lines 62-68).

With respect to claim 7, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2), wherein determining a relative amount of chroma comprises calculating (1-RATIO) wherein RATIO is a ratio between a minimum of the initial primary color data values and a maximum of the initial primary color data values, (the amount of gray calculated as illustrated in fig 3, the color values are linear zed, so that linearly increasing value of colorants produce a linearly increasing colorimetric response being calculated, col.5, lines 62-68).

With respect to claim 8, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2), comprising: generating respective gray balancing components for initial CMY data values (color space transformation circuit 20 of fig 1, for generating CMY data value of color and gray balance, as shown in fig 20 of fig 1); generating respective color saturation adjustment components for the initial CMY data values (col.5, lines 62-68); and adding respective gray balancing components and respective color saturation adjustment components to produce respective gray balanced and color saturation

Art Unit: 2625

adjusted CMY data values (col.5, lines 15-30).

With respect to claim 9, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2), comprising: each gray balancing component comprises a portion of a corresponding maximum gray balance adjusted value, (determining maximum and minimum value, (col.6, lines53-57) wherein such portion of a corresponding maximum gray balance adjusted value is a function of a relative amount of gray in the initial CMY data values; (determining maximum and minimum value, (col.6, lines 53-57) and each color saturation adjustment component comprises a portion of a corresponding maximum color saturation adjusted value, wherein such portion of a corresponding maximum color saturation adjusted value is a function of a relative amount of chroma in the initial CMY data values, (the amount of gray calculated as illustrated in fig 3, the color values are linear zed, so that linearly increasing value of colorants produce a linearly increasing colorimetric response being calculated, col.5, lines 62-68).

With respect to claim 10, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2), wherein generating respective gray balancing components comprises calculating (the amount of gray calculated as illustrated in fig 3, the color values are linear zed, so that linearly increasing value of colorants produce a linearly increasing colorimetric response being calculated, col.5, lines 62-68). GRAYBAL\_C(C)\*RATIO GRAYBAL\_M(M)\*RATIO

Art Unit: 2625

GRAYBAL\_Y(Y)\*RATIO wherein GRAYBAL\_C(C), GRAYBAL\_M(M) and GRAYBAL\_Y(Y) are maximum gray balance adjusted values, and RATIO is a ratio between a minimum of the initial CMY data values, and a maximum of the initial CMY data values, (the amount of gray calculated as illustrated in fig 3, the color values are linearized, so that linearly increasing value of colorants produce a linearly increasing colorimetric response being calculated, col.5, lines 62-68).

With respect to claim 11, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2), wherein generating respective color saturation adjustment components comprises calculating: SAT\_C(C)\*(1-RATIO) SAT\_M(M)\*(1-RATIO) SAT\_Y(Y)\*(1-RATIO) wherein SAT\_C(C), SAT\_M(M) and SAT\_Y(Y) are maximum color saturation adjusted values, RATIO is a ratio between a minimum of the initial CMY data values and a maximum of the initial CMY data values(the amount of gray calculated as illustrated in fig 3, the color values are linearized, so that linearly increasing value of colorants produce a linearly increasing colorimetric response being calculated, col.5, lines 60-67).

With respect to claim 12, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2), comprising: generating respective gray balancing components for initial CMY data values (color space transformation circuit 20 of fig 1, for generating CMY data value of color and gray balance, as shown in fig 20 of fig 1); generating respective color

Art Unit: 2625

saturation adjustment components for the initial CMY data values (col.5, lines 62-68; and adding respective gray balancing components and respective color saturation adjustment components to produce respective gray balanced and color saturation adjusted CMY data values (col.5, lines 15-30).

With respect to claim 13, Mongeon teaches a method of gray balance adjustment and color saturation adjustment (scanning/printing system as shown in fig 2), comprising: each gray balancing component comprises a portion of a corresponding maximum gray balance adjusted value, (determining maximum and minimum value, (col.6, lines53-57) wherein such portion of a corresponding maximum gray balance adjusted value is a function of a relative amount of gray in the initial CMY data values; (determining maximum and minimum value, (col.6, lines 53-57) and each color saturation adjustment component comprises a portion of a corresponding maximum color saturation adjusted value, wherein such portion of a corresponding maximum color saturation adjusted value is a function of a relative amount of chroma in the initial CMY data values, (the amount of gray calculated as illustrated in fig 3, the color values are linear zed, so that linearly increasing value of colorants produce a linearly increasing colorimetric response being calculated, col.5, lines 62-68).

Art Unit: 2625

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Negussie Worku whose telephone number is 571-272-7472. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Aung Moe can be reached on 571-272-7314. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Nw

08/30/07



AUNG S. MOE  
SUPERVISORY PATENT EXAMINER

9/4/07